

Monthly Activity Report

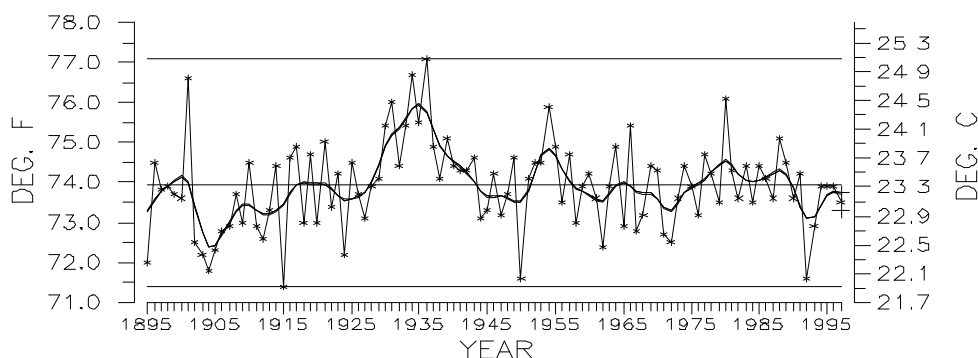
July 1997

National Climatic Data Center

A National Resource for
Climate Information



U.S. NATIONAL TEMPERATURE
JULY 1895-1997



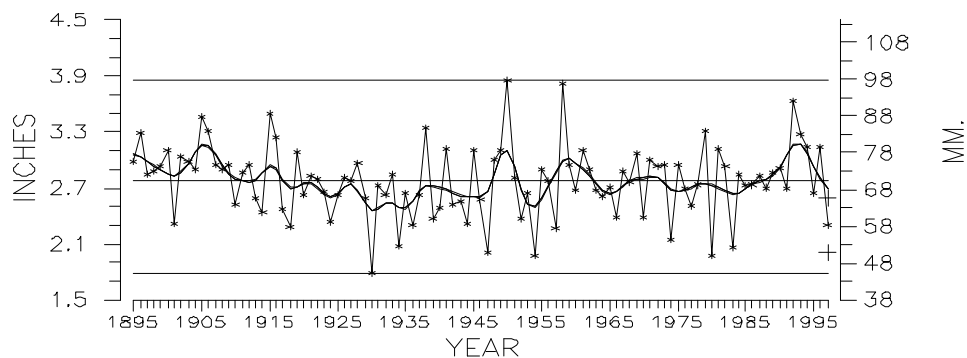
National Climatic Data Center, NOAA

STRAIGHT HORIZONTAL LINES ARE
MAXIMUM VALUE (TOP),
LONG-TERM AVERAGE (MIDDLE),
MINIMUM VALUE (BOTTOM)

THICK SMOOTH CURVE
IS 9-POINT BINOMIAL
FILTER.

CONFIDENCE INTERVAL
FOR CURRENT YEAR IS
INDICATED BY '+'.

U.S. NATIONAL PRECIPITATION
JULY, 1895-1997



National Climatic Data Center, NOAA

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Preliminary data for July 1997 indicate that temperature averaged across the contiguous United States was below the long-term mean ranking as the 32nd coolest July since 1895 (top figure). Four percent of the country was much cooler than normal while only one percent of the country was much warmer than normal.

July 1997 was the 10th driest such month since 1895 (bottom figure). Over 16 percent of the country experienced much drier than normal conditions while about 9 percent of the country was much wetter than normal.

DIRECTOR'S HIGHLIGHTS

NOAAPORT Receive Station

A site survey by the National Weather Service (NWS), PRC, and GTE personnel was conducted in July to determine the best location for the NOAAPORT antenna. The subcontractors will be submitting a site survey report within the next 30 days, and if the process goes smoothly, installation of hardware and software could take place by the end of October 1997.

NASA/NOAA Prototype Long-term Archive

Hughes STX was awarded the task of completing the prototype long-term archive. The prototype will ingest Mission to Planet Earth data and satellite derived products from the NASA Distributive Active Archive Centers. As the inventory is developed it will be pass to the National Climatic Data Center (NCDC) to permit the data and products to be available via NCDC's on-line system. The prototype will run December 97 through May 98.

Decline Continues in Customer Service Activities

July 1997 figures compared to July 1996 statistics reveal a decline in most customer service activities. July 1997 data sales represent a 6 percent decline from July totals a year ago. Data sales for Fiscal Year 1997 to date show a more significant 15 percent decline from the same period in Fiscal Year 1996. Customer orders completed in July 1997 indicated a 23 percent decline from those in July 1996. Customer telephone calls and letter receipts for July 1997 represented an 8 percent and

4 percent decline respectively from July 1996 figures. A striking exception to the observed trend was a 38 percent increase in electronic mail receipts for July 1997 as compared to the same month totals last year. The most notable trend in customer product purchases for July 1997 was the 63 percent increase in orders for Level III Next Generation Weather Radar (NEXRAD) data with most requests coming from the consulting meteorologist community.

Unisys Software Migration Project (SMP)

The majority of the Unisys software migration work will be conducted utilizing NCDC in-house staff resources. Survey teams have been formed to quantify the scope and complexity of the migration of application systems from the Unisys mainframe computer to an "open system" environment. A detailed application software survey will be completed within the next four months that will define the resources required to migrate software, establish the appropriate computing capacity, and prioritize the schedule of application systems to be migrated.

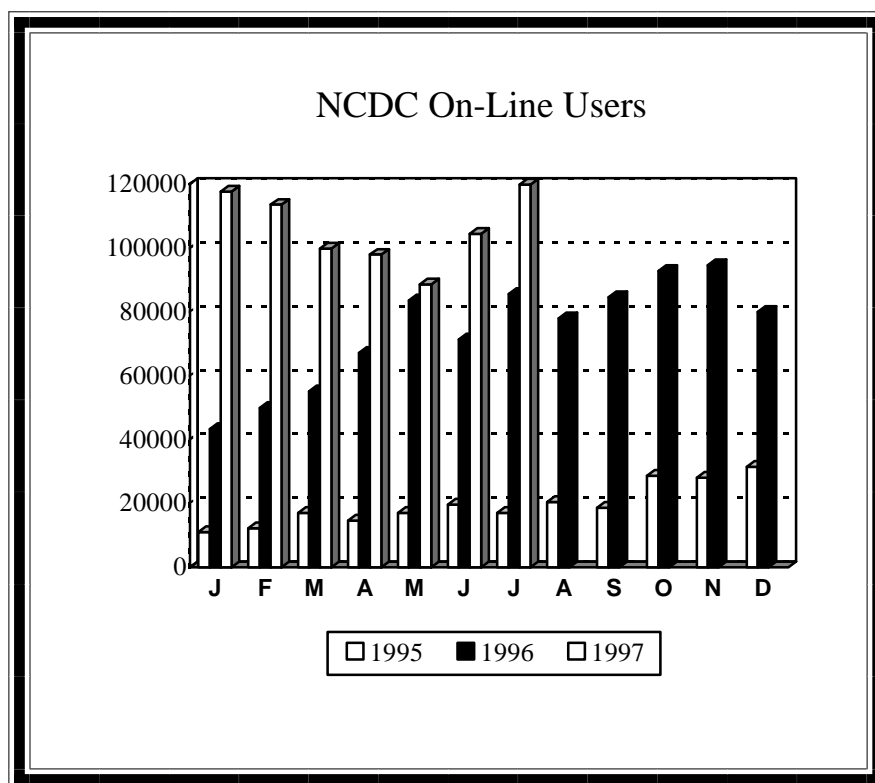
G3OS Joint Data and Information Management Panel (JDIMP)

The National Climatic Data Center's (NCDC) Senior Scientist, Thomas Karl, attended the Global Climate-Ocean-Terrestrial Observing System (G3OS) Joint Data and Information Management Panel held in Tokyo, Japan, July 15-18, 1997. Karl chaired the meeting which was the first combined meeting of the three observing systems. Considerable time was spent in outlining JDIMP's

responsibilities, addressing the current data plan, and developing new projects. The primary role of the JDIMP will be to identify and develop solutions to existing weaknesses in end-to-end global data systems from observing to quality control, and dissemination of data sets.

Cooperative Observer Recognized for 60 Years of Service

The National Climatic Data Center (NCDC) and the National Weather Service (NWS) helped to make the 1997 Fourth of July celebration in Woodstock, Georgia, a special one for Mr. William C. Booth, a long time Cooperative Observer. Mr. Booth was recognized for being an active Cooperative Program volunteer observer since June 1937. He is a former school teacher and principal and at age of 89 continues to take observations. The mayor read a proclamation that made the Fourth of July, William C. Booth "Day" in Woodstock. Grant Godge of NCDC's Data Operations Branch presented Mr. Booth with a letter signed by the NCDC Director and a framed copy of his first record taken in 1937. In addition, the NWS honored Mr. Booth with the Helmut Landsberg award for 60 years of observing service.



Independent Team Review

The results of an independent team consisting of industry micrographic experts that were assembled to review NCDC's film rescue project was presented during July. The team's goals were to examine the film duplication processing and quality standards and make non-binding recommendations for improvement. Of the almost 6,000 reels of film that have been inspected thus far, the government has rejected 25 percent.

CLIMATE DATA AND INFORMATION SERVICES

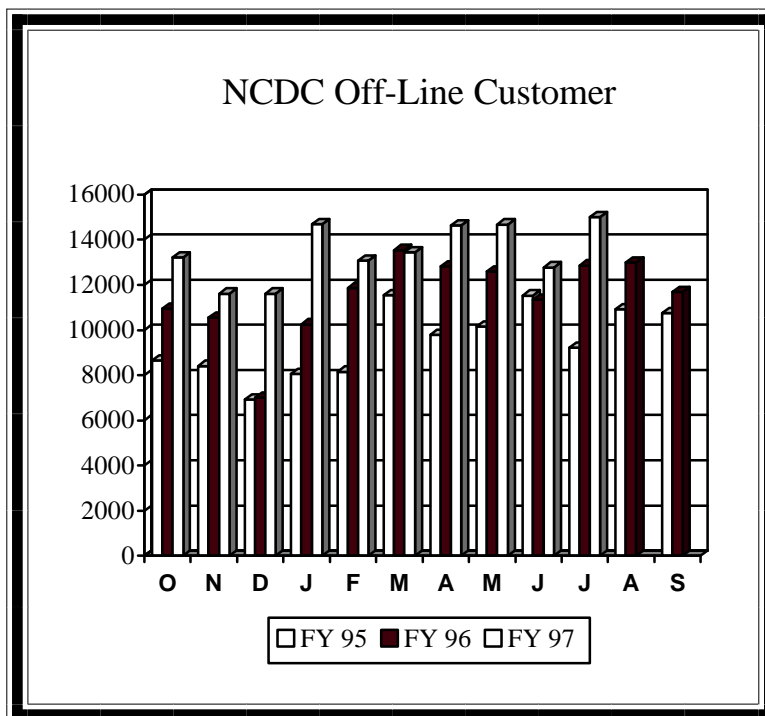
◆ Data and Information Distribution

NEXRAD Level II Tape Recycling

The National Weather Service (NWS) records about 30,000 tapes each year at its Next Generation Weather Radar (NEXRAD) sites. The National Climatic Data Center, who provides the tapes to the NEXRAD sites, has developed procedures to degauss and reuse the tapes. The NWS verified that they can use the degaussed tapes without any difficulty which will equate to a yearly savings of almost \$100,000.

Hurricane Danny Report Placed On-Line

The National Climatic Data Center (NCDC) placed a report on Hurricane Danny on-line just two days after the weekend landfall. The report includes a narrative about the storm and its aftermath, the tracking coordinates/history for the system, satellite infrared and visible images, and Next Generation Weather Radar (NEXRAD) images showing the storm's total precipitation. The report is accessible through NCDC's "Weather Events of 1993-1997" web page (www.ncdc.noaa.gov/rcsg/weather-events.html).



◆ Satellite Data Requests

Baja's Horseshoe Vortices Studied

Mr. H. T. May, Albuquerque National Weather Service Office, is investigating mid-level jet stream interactions associated with Mesoscale Convective Systems (MCS). Mr. May has noted horseshoe vortices developing cloud arms flowing around both sides of large MCS complexes, which form during the winter months off the coast of the southern Baja California peninsula. Several GOES-9 color-enhanced infrared images are being temperature contoured by NCDC and will be sent

to Mr. May for his investigation. Mr. May hopes the temperatures of the cloud arms will help him determine the altitude of these features that sometimes extend a hundred or more miles from the MCS.

Storm Warning Relies on Satellite Photos

GRB Entertainment in Studio City, California, is producing a new documentary series for the Discovery Channel called Storm Warning that focuses on weather-related disasters and weather phenomena. Several visible and infrared Geostationary Operating Environmental Satellite (GOES) and polar orbiting satellite images created by the National Climatic Data Center have been ordered by the company. The most recent was a color-enhanced infrared image of 1995 Hurricane Erin as it made its second Florida landfall near Pensacola.

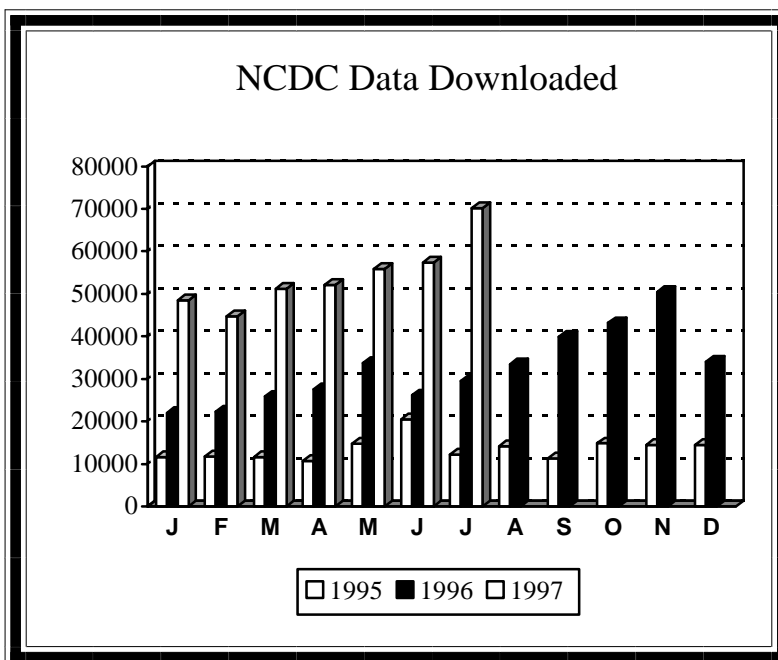
◆ Requests from News Media

NBC's Dateline Interviews Senior Scientist

NCDC's Senior Scientist, Thomas R. Karl, was recently interviewed by NBC's Dateline. During the interview Mr. Karl discussed the relationship between the Fort Collins flood and global warming. He also addressed what the future climate might look like if global warming continues.

Flying Saucers or Meteors in the Sky?

A researcher and science writer for the San Francisco Examiner obtained surface and upper air data for the Washington state area for June 24, 1947. They are investigating the famous UFO



sighting on that date near Mount Rainier, Washington. The sighting, which was made by a private pilot flying at 9,200 feet and involved a series of bright objects, is one of the more popular historical UFO events. The researchers believe the pilot probably saw a daytime meteor/fireball skirting the horizon. They have located information that directly supports the meteor explanation. In order to strengthen their case, the National Climatic Data Center provided information about weather conditions at 3:00 p.m. mountain time, the time of the event. The surface and upper air data package will be used to analyze cloud cover layers across the region and determine refractive indices related to possible mirages.

Unnamed Hurricane of 1991 Stirs Interest

The London Times is writing an article concerning the life history of an extremely intense Nor'easter that caused heavy flooding and extensive damage along the eastern seaboard from Florida to Maine in late October 1991. During the course of the

tempest, Canadian buoy 44137 reported an astounding wave height of 101 feet! The complex storm first absorbed the remnants of Hurricane Grace on October 29. Later, as the extra tropical storm was winding down, it became more of an enigma when a brief unnamed hurricane developed as the center of the storm moved over the warm waters of the gulf stream on November 1. The hurricane went unnamed because it was feared naming the system would cause confusion on the part of the media, emergency management officials, and the public. The National Climatic Data Center supplied the Times with infrared and visible images of the hurricane when it had just reached hurricane status. In addition, excerpts of the descriptions of the storm from the NCDC's Storm Data publication and from the Diagnostic Report of the National Hurricane Center publication were provided.

Maximum/Minimum Temperature Trends

David Easterling, a Meteorologist in NCDC's Climate Perspectives Branch, participated in two telephone conference interviews with the BBC World News; UPI; San Francisco Chronicle; Reuters; two German reporters; the Washington Post; a Missouri newspaper; the Seattle Times; the

Dallas Morning News; and a radio station in St. Louis. The interview discussions centered around a science paper entitled The Maximum and Minimum Temperature Trends for the Globe.

♦ Interesting Requests

NCDC's Climatic Data Supports Disease Research

The University of London's School of Hygiene and Tropical Medicine is conducting research on climate-related diseases. The project is beginning with a detailed look at how and why encephalitis is spreading throughout regions of Vietnam, Thailand, and China. Encephalitis is a disease where one or more viruses invade and cause inflammation of the human brain. As the viruses tend to thrive in hot climates, temperature data is being directly correlated with the actual account of encephalitis cases in each of the aforementioned countries. The National Climatic Data Center's data within the Global Historical Climate Network has proved invaluable for the project. This data is readily available for the researchers on NCDC's home page.

SCIENTIFIC AND PROFESSIONAL ACTIVITIES

♦ Working Groups/Committees/Meetings

Data Systems Advisory Council (DSAC)

DSAC representatives met in Asheville, North Carolina, to conduct a quarterly review of operations and cross-Center projects involving shared use of Information Technology (IT). Many of the discussions addressed NOAA Server and

NOAA Virtual Data System (NVDS) issues for FY 1998. The DSAC also used this occasion to review the NVDS Opportunity Identification document, provide guidelines for the Migration Options document, and review budget and implementation plans for FY 1998 NVDS tasks. In addition, the DSAC drafted a new charter that will be submitted to the Chairperson of the Data Management Council (DMaC) and the Deputy Director of NESDIS for signature.

Annual ASHRAE Meeting

Marc Plantico, NCDC's Climate Applications Branch Chief, attended the annual ASHRAE meeting in Boston, MA, June 29-July 3, 1997. In addition to chairing the Weather Information Committee meetings, Mr. Plantico presented a talk entitled Weather Data for ASHRAE Research at a seminar introducing the new weather data in the 1997 ASHRAE Handbook of Fundamentals (HOF). The 1997 HOF contains significantly updated and revised design information that will be used by heating/cooling design engineers. Major improvements to the HOF include increasing the number of locations from 1079 to 1443 (most of these are international sites); updating the period of record from 1950-64 to 1982-93 (1961-93 for U.S. SAMSON locations); adding new psychometric data (design dew point, humidity ratios, etc); and computing the design values using annual percentiles rather than seasonal frequency of occurrence.

Interactive Multisensor Snow and Ice System (IMS)

Geof Goodrum of NCDC's Satellite Services Branch represented the Center at an IMS meeting on July 8, 1997, in Camp Springs, Maryland. IMS is replacing the labor-intensive task of plotting snow and ice coverage with a workstation-based system, incorporating data overlays from multiple sources, including National Oceanic and Atmospheric Administration

(NOAA) satellites. The system is scheduled for operation on November 3, 1997, with a two year validation study funded by a grant from the Office of Global Programs (OGP).

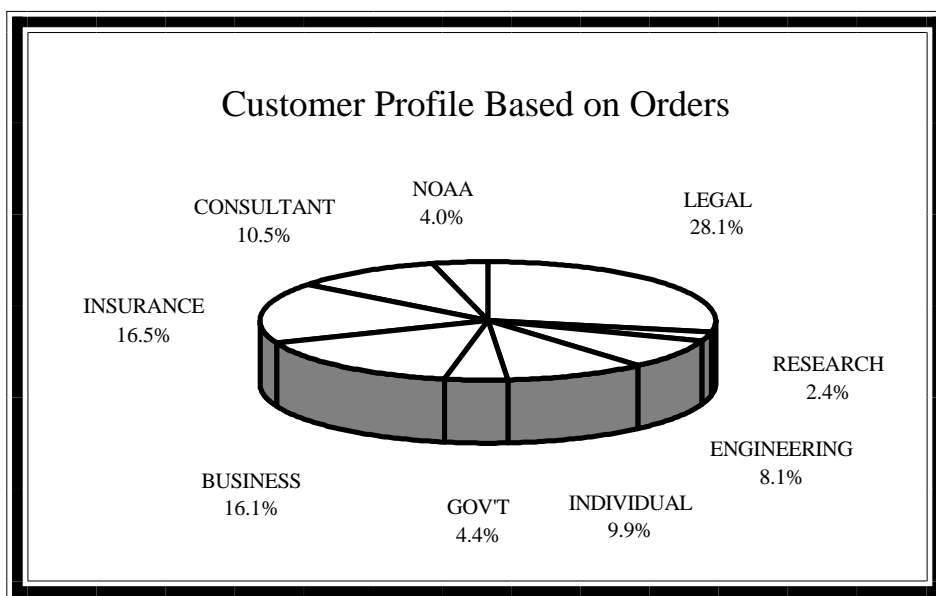
Global Climate Observing System

NCDC's Tom Peterson visited the KNMI at deBilt, the Netherlands, to attend a Global Climate Observing System (GCOS) Surface Network Experts meeting and search KNMI's archive for additional historical data. Significant progress was made for station network selection and recommendations were proposed for monitoring the resulting data. Harald Daan of the Netherlands will take the lead on the final GCOS Surface Network station selection. Additional historical data was located in the Netherlands archives and contacts were made for the possible exchange of data.

♦ Visitors

Educators in Industry

Ms. Angela Cannon, Asheville Middle School, visited the Center July 15-18, 1997, as part of the



Educators in Industry Program. The program's objective is to familiarize educators with the skills/experience needed in today's working environment. This is the second year the program has been in existence, and more than 50 teachers were disbursed to various business throughout the Asheville area. Ms. Cannon's visit to the Center included discussions and demonstrations in the Climate Services Division, Global Climate Laboratory, Operations and Support Division, and the Systems Development Staff.

Missouri State Climatologist

Dr. Steve Qi Hu, Missouri State Climatologist, completed a 10 day visit to the NCDC, as part of the State Climatologist Exchange Program. He investigated the pre-1980 soil temperature data base and developed an inventory so the data may be more accessible to researchers. Also, as part of his work, he wrote programs to inventory and identify missing and bad data. Dr. Hu will continue to work on the project at the University of Missouri. A program to quality control the data will be his next step.

♦ Publications

Global Warming

An article by Thomas R. Karl, Neville Nicholls, and Jonathan Gregory entitled *The Coming Climate*, was published in *Scientific American*. The article describes the various aspects of global warming

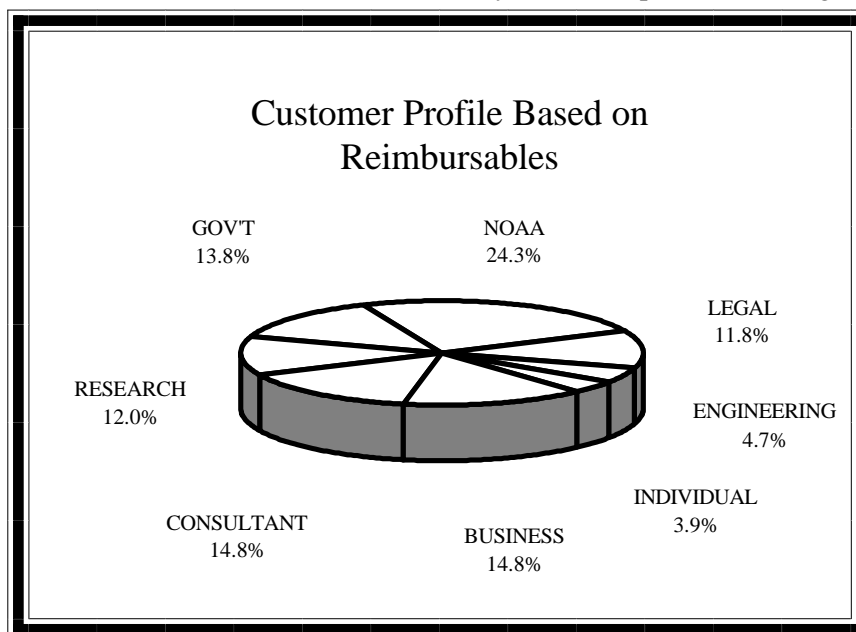
in terms of weather and climate extremes recent and projected changes.

1995 Chicago Heat Wave

An article by Thomas R. Karl and Richard W. Knight was published in the *Bulletin of the American Meteorological Society* titled "The 1995 Chicago Heat Wave: How Likely is a Recurrence?" The 1995 heat wave is shown to be very unusual because of elevated nighttime temperatures. A model is developed that can be applied to other cities to project probabilities of various heat and cold wave intensities in a changed climate.

Snowfall in New York

Grant Goodge of NCDC's Data Operations Branch (DOB) co-authored a paper for the 10th AMS Conference on Applied Climatology entitled *A Brief Summary of the Report on Montague*,



New York's 77 Inch, 24 Hour, January 11-12, 1997, Lake-Effect Snowfall.

NCDC's Satellite Services Featured in Earth System Monitor

The June 1997 issue of Earth System Monitor featured the National Climatic Data Center's (NCDC) satellite services in an article authored by Bob Boreman, NCDC's Climate Applications Branch. The article, entitled NCDC's Environmental Satellite Data Base, gives an excellent description of NCDC's role in archiving and servicing both polar orbiting and geostationary satellite data, and contains several impressive satellite images of interesting events including the Mount St. Helen eruption. The article provides information about the various satellites, data availability, the general uses of the data, and ordering information. NCDC's Satellite Services Group has the responsibilities of disseminating satellite data from all of the National Oceanic and Atmospheric Administration (NOAA) Polar orbiter, Geostationary Operating Environmental Satellite

(GOES) , and selected National Aeronautics and Space Administration (NASA) satellites, as well as recently taking over the duties of NASA's Marshall Space Flight Center as the primary focal point of Defense Meteorological Satellite Program (DMSP) data. The group also serves as the help desk for Polar orbiter and DMSP satellite queries.

♦ Interactions with NOAA Line Offices

Binghamton NEXRAD Data

The National Climatic Data Center (NCDC) provided several days of Binghamton, New York, Next Generation Weather Radar (NEXRAD) Level II data from December 1995 and January 1996 to the Binghamton National Weather Service forecast office. The data will be run through locally-developed prototype software and will then be mapped to a Geographical Information System (GIS) for further study. The overall project goal is to examine the feasibility of using the radar data as input into an already existing GIS-based snowmelt model.

EMPLOYEE ACTIVITIES

♦ EEO and Community Outreach

Tom Ross was an invited participant at the North Carolina Leadership Network for Earth Science Teachers, Southern Mountain Region at Western Carolina University during July 1997. The group's goals were to develop professional quality observations, manuals, and other materials used by teachers in the earth science arena so that they had adequate background for instruction in the secondary school earth science curriculum. Mr.

Ross provided training in the collection of daily weather observations at three different cooperative sites on the WCU campus during the month long project. The teachers collected daily maximum/minimum temperatures, rainfall, wind direction and speed data, sky cover, barometric readings, and wet bulb/dew point temperatures. Mr. Ross used this opportunity to introduce the attendees to some of NCDC's products and services.

NCDC Data Volumes

